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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,382	04/06/2001	Ajith K. Kumar	20-LC-2069/624226.284	9261
25102	7590	11/24/2003	EXAMINER	
HOLLAND & KNIGHT LLP PO BOX 1526 ORLANDO, FL 32802-1526			DEMAKIS, JAMES A	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/828,382

Applicant(s)

KUMAR ET AL.

Examiner

James A Demakis

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4/06/01.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because Figure 1 has numerous blocks and elements that are not labeled or identified; and, also are not discussed in the specification. Also, alternator 11 is coupled to rectifier diodes, which have all anodes and all cathodes tied together. How do the switches function with these connections? Please correct. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

3. Claims 2-6,9-10 are rejected under 35 U.S.C. 112, fourth paragraph, as failing to further limit the independent claims because the independent claim is a method while the dependent claims are limitations directed to structural elements. Structure does not further limit a method claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al (USPN 5363039) in view of Friedlander et al (USPN 5892342).

Regarding Claims 1,12:

Kumar et al disclose a method to identify short-circuit conditions prior to initiating operation of a power inverter 14 used in an AC electric motor drive system 10. The method includes measuring the voltage intermediate the switching devices prior to enabling the devices into conduction. The measured voltage is then compared to the voltage at each of the voltage busses. If the measured voltage is substantially equal to either one of the bus voltages, one of the devices is short-circuited and the system is inhibited from initiating operation of the inverter. The voltage measurement is made at a pre-selected time period after power is applied to the voltage busses, the time period is selected to be sufficiently long to allow the voltage to settle and sufficiently short to prevent the voltage from discharging through the load, see Col.1, lines 48-68 and Col. 3, lines 1-4. This reads on the claimed method concept with the measurement point being specified at a capacitor 52,60 parallel to each switching device 32,34. A line filter is not disclosed.

Friedlander et al disclose a self-test system for a shorted-diode protection circuit 35 in an electric vehicle propulsion system 10. A capacitor 47, or DC link capacitor, of a line filter circuit is used to charge to a voltage level over a computed time interval as a means to determine a shorted diode device. A voltage measuring scheme is used to determine a diode device short circuit of a thyristor type device 37.

It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Kumar et al by the teachings of Friedlander et al to have used a common measurement point at a filter capacitor for ease of comparison to prevent unbalanced power supply conditions from a shorted thyristor that may cause mechanical damage for these systems.

6. Claims 7-8,11,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al and in view of Friedlander et al as applied to claims 1,12 above, and further in view of Ikeyama et al (USPN 6100660).

Regarding claims 7-8,11,13:

Kumar et al as modified by Friedlander et al does not teach temperature sensing at each switching device and current measurement and control.

Ikeyama et al discloses control 10 of supply current of an electric motor 11, and particularly preventing a switching element 12 from thermal breakdown. Temperature sensors 19 located close or at the switching elements generate values 22 to a controller 10 that compares, measured temperature values to predetermined target values for adjusting the current through the switching element.

It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Kumar et al and Friedlander et al with the teachings of Ikeyama et al to increase the reliability of the system by preventing a thermal breakdown open circuit of the switching device.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A Demakis whose telephone number is 703.305.7938. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 703.308.3119. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0956.

James A. Demakis

November 17, 2003



BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2200